

CHUCK WING, DESERT NEWS

**Fisherman on the Provo River practices catch and release.**

## FISHING

*Continued from D1 12-1-98*

15 inches can be kept and no rainbow or cutthroat — has been very good fishing lately.

There have been reports of large browns in the 9- to 10-pound class being caught that had apparently moved upstream from Deer Creek to spawn.

The section from Holmstead out of the canyon and through the city to Utah Lake falls under regular guidelines, those being the use of any legal bait, lure, flies and keeping up to eight fish.

According to Thompson, "There are a lot of fish in this section."

Access is also good in some areas. The Provo City Trails follows a section of the river. Also, there's access at the intersections and from there, fishermen can move upstream or downstream without much problem.

The Weber River has also been good for whitefish between Rockport and Echo reservoirs. Typically, when the water begins to cool, the trout fishing slows and the whitefish fishing picks up. Good fly pattern would be a red or

green serendipity.

Byron Gunderson, of Fish Tech Outfitters, said recent reports show that fishing has been good on the Green River below Flaming Gorge. Fishing nymphs along the bottom and stripping back Woolly Buggers have been working well.

Higher temperatures and winds have pushed back ice-up on two of Utah's more popular ice fishing spots — Scofield and Strawberry. It hasn't, however, slowed the fishing.

Gunderson said on Sunday he caught a dozen fish, most in the 20-inch range, in a span of about 90 minutes.

"The secret," he said, "is to fish shallow, in between five and 15 feet of water. This is also a good time to fish from shore."

The catch rate at Jordanelle has slowed down in recent weeks, but Deer Creek has been good for those trolling near the surface around the island.

Perch fishing has been good at Yuba and will improve when the ice forms.

With no big storms in the forecast and predictions of continued mild temperatures, fishing in open waters should remain good for the next few weeks.



# Whirling disease spores found in Provo River

5-24-98

By The Associated Press

LOGAN — Whirling disease spores have been found in the upper portions of the Provo River, and wildlife officials fear it won't be long before the parasite infects the blue-ribbon fishing areas below.

"There is a good chance the parasite is already present in the drainage," said Chris Wilson, of the Fisheries Experiment Station in Logan. "We need more samples to confirm that the whirling disease parasite has infected the Provo River."

In a copyright story published Saturday, The Salt Lake Tribune reported that another worry is the proximity of the state's Midway Hatchery to the river in the Heber Valley. It is one of just 12 state hatcheries and produces more than 750,000 trout each year.

"I have been expecting it so I'm not too overly shocked to hear that it has happened," said Steve Schmidt, an avid angler and owner of Western Rivers Flyfisher shop in Salt Lake.

Signs were being posted this weekend informing anglers that whirling disease has been detected on the upper Provo.

"There is not a whole lot we can do about it other than wait to see the impact and go from there," said Randy Radant, aquatic coordinator for the DWR. "The Provo River is extremely important. It receives high angler use."

From 1990 to 1995, angler pressure on the Provo, mainly the lower section, increased 240 percent, making it Utah's most fished river.

Officials say it is almost inevitable that Jordanelle will become infected because the Provo River pours into it. After that, the spore could move down to the stretch of river between Jordanelle and Deer Creek reservoirs, known as the middle Provo.

The scientists also are encouraged that brown trout, which have shown a resistance to the disease, dominate the Provo, especially in the lower section. They warn that trout hatched in the river still are susceptible to deformity because of their small size.

Whirling disease was first discovered in Utah trout in 1991 in a private hatchery owned by the family of Gov. Mike Leavitt in southern Utah and in the nearby Fremont River.



Keith & Jody Brown of Provo, will marry Jason James Boyle, son of Clair & Judy Boyle of Rexburg, ID, on Friday, Dec. 4, 1998. A reception will be held in their honor from 7-9 p.m. at the East Bay Golf Course.

what they feel is right. Most often parents do not know what to do with their rebellious teenager and/or cannot afford to get help. This is one of the reasons Terie and I write this column each week.

directors at Extended Family Lifeskills Program in Spanish Fork. Send your questions to their e-mail address [Napsystems@enol.com](mailto:Napsystems@enol.com) or write them at 1443 E. 920 South, Provo, 84606 or call them at 794-0318 or 374-8626.

Wal-Mart. "My cholesterol was once close to 300," she said, "and I've lowered it to 189, with medication and walking." Because she already has an outside walking program, she thinks the treadmill will help her continue her workouts during the winter. Bill Goodwin, commercial sales manager for Fitness Pro of Lexington, which sells

"A lot of people take delivery of new equipment, but they're not sure how to set up an actual exercise program," he said. "The person has to be self-motivated." Jake Karraker, a Lexington personal trainer for World Gym, recommends varying the machine routine. Treadmill users can work out in intervals of running and walking, sprinting or hill climbing.

that have exercise equipment:

	Men	Women
Free weights	48.3	21.9
Treadmill	17.8	32.8
Stationary bike	18.4	27.0
Spot toner	11.7	13.0
Ski	7.4	8.9

GOALS  
Percentage of purchasers who specified their goals when buying their exercise equipment:

	Men	Women
Muscle tone	52.5	33.2
Weight/fat loss	18.0	43.3
Cardiovascular	22.3	22.2
Mental attitude	6.4	8.5
Aerobics	4.0	3.6
Stay fit/healthy	4.4	2.9
Rehab injury	2.3	1.1

# Thursday Evening

	TCI	Provo	Ins.	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30
KUTV	2	2	2	CBS News (CC)	Entertainment Tonight	Promised Land: Out of Bounds. (CC)		Diagnosis Murder: Murder X 4. (CC)		48 Hours: Surviving Divorce. (CC)		News (CC)	(10:35) Late Show With David Letterman (R) (CC)		Late Late Show Snyder
KTVX	4	4	4	News (CC)	Wheel of Fortune (CC)	'Forrest Gump' (PG-13, '94)	★★★ JFK, LBJ, Vietnam. Watergate and other history is seen through the eyes of an Alabama man (Tom Hanks) with an IQ of 75. Drama. (s) (cc)					News (CC)	(10:35) Nightline (CC)	(11:05) Inside Edition (CC)	(11:35) Hard Copy (CC)
KSL	5	5	5	News	News	Friends (R) (CC)	Jesse (R) (CC)	Frasier (R) (CC)	Just Shoot Me (CC)	ER: Exodus. Guest Mickey Rooney. (R) (CC)		News	(10:35) The Tonight Show With Jay Leno (CC)		(11:35) Mad About You
				The NewsHour With Jim Lehrer		On the Road With Uncle Golden: Stories about Utah church				Yellowstone Serenade		Keeping Up Ap	As Time Goes		On the Road With Uncle Golden



# UDOT promises to help keep Provo River a 'Blue Ribbon'

cial in generating 15 to 24 inch trout, and it's gotten better since the state (1) stopped stocking fish, leaving it to natural propagation and (2) instituted stricter catch/release regulations above Olmstead Dam. We must zealously guard what we have. This doesn't make it any easier for highway crews who must figure out how to get more lanes through sheer rock. I don't envy their assignment. But construction crews

GETTING OUT

HARTT WIXOM

PROVO — The Provo River is getting a new look. Some of it is good, although anglers are becoming more apprehensive these days about whether the builders of U.S. 189 will allow people to actually use Provo Canyon as well as drive through it at higher speeds. The good I speak of is new log structures placed in the river by the Division of Wildlife Resources. These logs, anchored via cable and concrete (the latter buried in the stream bed), provide additional habitat for the

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A CHILLING EXPERIENCE







# OUTDOORS

Tuesday, April 27, 1999, THE DAILY HERALD, Provo, Utah — Page B3



hitting a fresh water species as ever there was, fills a troutless niche in local reservoirs, including Deer Creek and Jordanelle.

But hopefully, urban/near-urban trout fisheries won't be forgotten. These include the Provo River, Hobbie Creek, Thistle and Soldier creeks in Spanish Fork Canyon, Diamond Fork, etc. Improving these fisheries should fit in with the DWR's announced plan to involve more young people in the sport of angling. Many in the cities are growing up knowing only electronic gadgetry, including video games. And worse.

With more enticing urban fisheries, perhaps more parents can get out with their

these urban fisheries? In the case of the nearby Provo River, placement of boulders and logs (stream rehab) to halt swift, straight flow in a narrow channel. On the Provo above Deer Creek Reservoir, much money is being spent to improve the fishery by replacing meanders on the river.

No room, of course, for that below the canyon mouth with so many homes along the banks. But why not spend some of that federal funding allocated for the upper Provo where the people are?

Yes, there are problems. Water users sometimes siphon most of the flow in low water years from the diversion at 2230 North and

and gone to heaven upon catching a 19-inch brown in that location. But heavy machinery in the stream, apparently in the name of flood control, destroyed the habitat which had been by the bridge. Thankfully, it stopped there.

Too much debris along the banks? Chances are that a church service group or boy scout troop would take on the weekly chore of cleaning it up to improve aesthetics.

Perhaps an understanding could be reached with valley water users each spring (based on snowpack) to determine if some could remain in the channel. Only recently has Utah water law allowed that flow left in a stream channel can be considered a beneficial

however, a major downstream. I once had hopes the Jordan River might be a prime brown trout stream into the Salt Lake City limits. But the powers there have blown it. Despite all the fuss over a Jordan River Parkway, flood control machinery and industrial pollution have nearly totally destroyed any final hope of a viable game fish asset on the Jordan.

It is not too late for the Provo.

It would seem that local city and county councils, Utah Valley travel officials, all who have an interest in Provo's future, would want to help out. Especially if we are to have a meaningful Provo River Parkway, as advertised.

ery. With rehab, it could be even better.

Diamond Fork, some 20 minutes from Provo, will improve when excess flows from Strawberry Reservoir are channeled into a pipe. Mankind put 40 times more water down this stream than nature intended, blowing out a once fine fishery. Hopefully, with completion of the tunnel, habitat will return. With plans for a reservoir on Diamond Fork abandoned, this should be a prime brown trout stream.

There are others we can't ignore: American Fork, Hobbie and Payson creeks. All are within a few minutes of a quarter-million Utah Valley residents.

BALTIMORE (AP) — Ray Miller evidently has had enough of merely throwing his hands up allowing a three-run homer in the ninth inning. Tim Lincecum suffered his first blown save by

## for the birds in '99

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**BIGGEST**

**WATCH FOR OUR**



Starting  
May 1st







Astros	11	14	440	1/2
Rockies	10	14	417	1

Thursday's games  
 1st game  
 2nd game  
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A-17,317 (17,317). T-218.
Officials—Steve Javie, Eddie F. Rush, Ron Garretson

## Rockets 102, Lakers 94

		FG	FT	Reb			
L.A.	Min	M-A	M-A	O-T	A	PF	Pts
Ceballos	38	10-19	4-5	4-12	3	4	25
Campbell	41	5-13	5-7	1-7	2	3	15
Divac	22	4-9	1-2	2-6	0	1	9
E.Jones	37	4-7	3-4	0-2	2	5	14
Van Exel	38	5-13	3-3	0-1	11	2	15
Johnson	30	2-8	4-4	2-5	5	1	8
Thraett	10	0-2	0-0	1-1	1	2	0
Peeler	24	3-6	0-0	0-3	0	2	8
Totals	240	33-77	20-25	10-37	24	20	94

Percentages: FG .429, FT .800, 3-Point Goals: 8-21, .381 (E.Jones 3-3, Peeler 2-3, Van Exel 2-5, Ceballos 1-5, Campbell 0-1, Divac 0-1, Thraett 0-1, Johnson 0-2). Team Rebounds: 8. Blocked shots: 4 (Campbell 3, E.Jones). Turnovers: 18 (Van Exel 5, Johnson 4, Ceballos 3, Campbell 2, E.Jones 2, Thraett, Peeler). Steals: 11 (E.Jones 5, Ceballos 3, Peeler 2, Van Exel). Technical fouls: Ceballos, 39.7 second; Illegal defense, 8:47 third. Illegal defense: 1.

		FG	FT	Reb			
HOUS	Min	M-A	M-A	O-T	A	PF	Pts
Horry	40	7-13	0-2	1-6	4	4	17
Brown	29	6-7	4-4	0-2	1	4	16
Olajuwon	42	12-22	1-2	4-11	7	4	25
Drexler	36	2-11	2-2	0-6	7	2	6
Smith	24	6-6	1-1	0-2	6	1	17
Elie	30	4-8	1-1	1-3	2	1	9
Bryant	8	1-1	0-0	0-1	0	2	2
Cassell	24	1-6	8-9	0-2	2	3	10
Mack	6	0-1	0-0	0-1	0	0	0
C.Jones	1	0-0	0-0	0-0	0	0	0
Totals	240	39-75	17-21	6-34	29	21	102

Percentages: FG .520, FT .810, 3-Point Goals: 7-18, .389 (Smith 4-4, Horry 3-8, Cassell 0-1, Mack 0-1, Drexler 0-2, Elie 0-2). Team Rebounds: 10. Blocked shots: 4 (Olajuwon 2, Drexler 2). Turnovers: 18 (Olajuwon 5, Drexler 4, Brown 2, Smith 2, Cassell 2, Mack 2, Horry).

## FRIDAY'S BASEBALL SCHEDULE

Friday's games  
 Uintah at North Sanpete, 3 p.m.  
 Park City at Union, 3 p.m.  
 Lehi at Wasatch, 3 p.m.  
 Granger at Bingham, 3:30 p.m.  
 Logan at Box Elder, 3:30 p.m.  
 Copper Hills at Hunter, 3:30 p.m.  
 East at Judge, 3:30 p.m.  
 Taylorsville at Kearns, 3:30 p.m.  
 Ben Lomond at Mountain Crest, 3:30 p.m.  
 Bear River at Sky View, 3:30 p.m.  
 Murray at Tooele, 3:30 p.m.  
 Woods Cross at West, 3:30 p.m.  
 Olympus at Cyprus, 3:30 p.m.  
 Brighton at Alta, 4 p.m.  
 Northridge at Bonneville, 4 p.m.  
 Layton at Clearfield, 4 p.m.  
 Weber at Fremont, 4 p.m.  
 American Fork at Jordan, 4 p.m.  
 Hillcrest at Orem, 4 p.m.  
 Provo at Payson, 4 p.m.  
 Sprinville at Timpani, 4 p.m.  
 Pine View at Hurricane, 4 p.m.  
 Parowan at Beaver, 3 p.m.  
 Grand at Kanab, 3 p.m.

## FRIDAY'S SOCCER SCHEDULE

Friday's games  
 Brighton at Alta, 3:30 p.m.  
 Woods Cross at Cyprus, 3:30 p.m.  
 Copper Hills at Granger, 3:30 p.m.  
 Orem at Jordan, 3:30 p.m.  
 East at Judge, 3:30 p.m.  
 Wasatch at Morgan, 3:30 p.m.  
 Rowland Hall at South Summit, 3:30 p.m.  
 Murray at Tooele, 3:30 p.m.  
 Olympus at West, 3:30 p.m.  
 Hillcrest at American Fork, 3:30 p.m.  
 Ben Lomond at Bear River, 4 p.m.  
 Northridge at Bonneville, 4 p.m.  
 Layton at Clearfield, 4 p.m.  
 Weber at Fremont, 4 p.m.  
 Sky View at Mountain Crest, 4 p.m.  
 Pleasant Grove at Payson, 4 p.m.

Florida	0	1	1-2
Philadelphia	0	0	0-0

First Period—None.  
 Second Period—1, Florida, Barnes 1 (Lowry, Laus), 5:56.  
 Third Period—2, Florida, Lowry 4 (Barnes), 15:50 (pp).  
 Shots on goal—Florida 5-6-4—15. Philadelphia 7-6-5—18.  
 Goals—Florida, Vanblesbrouck. Philadelphia, Hextall. A—17,380 (17,380).

## Blackhawks 3, Avalanche 2

Chicago	1	0	1	1-3
Colorado	0	2	0	0-2

First Period—1, Chicago, Ciccone 1 (Suter, Shantz), 2:02.

Second Period—2, Colorado, Lemieux 3 (Kamensky, Forsberg), 3:10, 3, Colorado, Sakic 8 (Deadmarsh, Ozolinsh), 4:25.

Third Period—4, Chicago, Craven 1 (Nicholls, Suter), 1:58 (pp).

Overtime—5, Chicago, Roenick 3 (Amonte, Chelios), 6:29 (pp).

Shots on goal—Chicago 10-8-6-2—26. Colorado 2-15-10-3—30.

Goals—Chicago, Belfour. Colorado, Roy. A—16,061 (16,061).

## IHL PLAYOFF GLANCE

CONFERENCE SEMIFINALS  
 (Best-of-7)  
 Eastern Conference  
 Cincinnati vs. Michigan  
 Wednesday, May 1  
 Cincinnati 3, Michigan 2, Cincinnati leads series 1-0

Dale Eggeling	35-35	-70	-2
Laura Davies	35-35	-70	-2
Tina Barrett	36-34	-70	-2
Donna Andrews	34-36	-70	-2
Danielle Ammaccapane	37-33	-70	-2
Amy Alcott	34-36	-70	-2
Suzanne Strudwick	34-36	-70	-2
Kelly Robbins	33-37	-70	-2
Marianne Morris	34-36	-70	-2
Kathryn Marshall	36-34	-70	-2
Vicki Goetze	33-37	-70	-2
Moir Dunn	35-35	-70	-2
Tania Abitbol	35-35	-70	-2
a-Cristie Kerr	36-34	-70	-2
Jennifer Wyatt	33-38	-71	-1
Kim Shipman	34-37	-71	-1
Barb Mucha	37-34	-71	-1
Michelle McGann	35-36	-71	-1
Jenny Lidback	37-34	-71	-1
Rosie Jones	35-36	-71	-1
Gail Graham	34-37	-71	-1
Brandie Burton	34-37	-71	-1
Kristi Albers	37-34	-71	-1
Karrie Webb	34-37	-71	-1
Leslie Spalding	35-36	-71	-1
Michele Redman	36-35	-71	-1
Cathy Mockett	35-36	-71	-1
Mardi Lunn	36-35	-71	-1
Emilee Klein	34-37	-71	-1
Tracy Hanson	35-36	-71	-1
Alicia Dibos	36-35	-71	-1
Mary Beth Zimmerman	36-36	-72	E
Kim Williams	35-37	-72	E
Maggie Will	35-37	-72	E
Kris Tschetter	37-35	-72	E
Caroline Pierce	35-37	-72	E
Melissa McNamara	37-35	-72	E
Sally Little	37-35	-72	E
Patti Liscio	36-36	-72	E
Hiromi Kobayashi	36-36	-72	E
Shelley Hamlin	34-38	-72	E
Stephanie Farwig	35-37	-72	E
Kim Bauer	37-35	-72	E

"I don't think the playoffs change from one series to the next, you still have to win the special teams battle," he said. "That's going to be a key in every situation."

The winner will advance to play either Las Vegas or Chicago, who also begin their semifinal match-up tonight, in the Western Conference Finals.

Here's how the No. 3 Grizzlies and No. 7 Rivermen match up for their second-round series:

## OFFENSE

**Utah:** Scored just 2.4 goals a game against Blades, which was more than a goal under season average. Regular season goal-scoring leader, rookie Brett Livers, didn't even make a point. Chris Taylor had two game-winning goals.

**Peoria:** Averaged only 3.34 goals in regular season but marked 3.8 in first round. Michel Mongeau led team with eight points (1 goal, 7 assists). Former Grizzly Barry Nieckar added two goals and five assists.

**Advantage:** Even (see Salo factor below).

## DEFENSE

**Utah:** IHL's best defensive squad got even better in playoffs. Captain Gord Dineen and fellow defensemen were solid in front of Salo, giving up just 126 shots. Allowed league-low goals in season (2.83 pg) and so far in playoffs (1.6). Salo has one shutout and two one-goal

Deseret News outdoor editor

By Ray Grass

Cooler weather is holding up high runoff, which is keeping rivers open.

Fishermen benefit from bonus time on Provo

FISHING





## WHIRLING

Continued from D1

plus licensed anglers, all pulling together, couldn't loosen it.

After a decade of dealing with the parasite, Chris Wilson, director of the Utah Division of Wildlife Resource's Logan experiment station, said he has discovered a number of things about the bug.

"For one, we've been very impressed by the parasite's durability. It survives anywhere and can be carried any number of ways — by humans, birds, animals, in the water itself," he said.

"Even now, after 10 years, we're still as concerned as ever about infecting new waters."

Last year, the DWR's worst fears came true. The bug got into the rearing ponds in the state-owned Midway hatchery. As a result, millions of fish had to be destroyed. Worse, most of those fish were headed for transplanting. The loss of the fish — 21 percent of the entire stocking program — weakened the state's summer planting program. Instead of ending up on an angler's hook somewhere, the fish were chopped up and sold as cat food.

An extensive program, involving the DWR, BYU and a private company, looked at the security of the water flowing into the hatchery.

Three springs that fed the hatchery were isolated, and sentinel fish were placed there for testing. Fish in two of the springs tested positive for whirling disease. It appears that water from the Provo River, which is infected with the disease and is flowing into irrigation canals throughout the area, is now seeping through the porous ground and contaminating the springs.

"What we're trying to do now is drill deeper wells to try and find water the spores can't reach," Joe Valentine, aquatic supervisor for the DWR, said. "One test well, which is down about 200 feet, looks very promising."

The DWR will need more wells, however, before operations at the hatchery can be resumed.

In the meantime, it will cost millions of dollars to disease-proof the Midway hatchery. Raceways, for example, will need to be built above ground to stop contaminated groundwater from seeping in. Also, a cover will need to be built over the ponds to protect them from aerial invasions. Biologists still believe the Midway hatchery was

contaminated by a bird diseased fish and excre into one of the ponds. To the Kamas hatchery from assault, a roof costing \$ had to be built.

It was in May 1991 the word came that whirling had been found in a cooling pond owned by the Ranch, which is owned by Gov. Mike Leavitt.

Shortly after the discovery, it also was found in the Freemont River. Attention was given to contain it.

The Leavitts eventually cited for several violations transporting fish without quarantine, and fined.

The Leavitts argued that the disease had been in the waters flowing into the raceways and was only first discovered.

Within the past decade has contaminated Utah's most popular fishing spot, the Provo (recently covered as far downstream as the Blue Ribbon section of the Provo River and on into the Weber and Beaver rivers). Rockport, Deer Creek, Minersville, Jordanel reservoirs.

Whirling disease was found in the Green River, Flaming Gorge. Biology is only a matter of time reaches Utah's most popular river, the Green below Flaming Gorge. As a measure of disease, Wyoming has planted kokanee in the Flaming Gorge.

The life cycle of the parasite is cyclic. It is eaten by a worm which grows and releases more bugs into the water. The worm either eats the worm site, which then attacks and spine of the fish. The fish dies and decomposes. The cycle begins anew. This time, no cure and controlling the parasite.

As a parasite, it can be picked up in mud on the fender of a vehicle, contaminated fish to sheds or taken off by new locations.

Symptoms include a whirling behavior, a deformed head and/or curved spine and eventually dying, either

Supervisor Chuck Bobo, left, and wildlife tech Ben Gilles look through the nets for stray fish infected with whirling disease.



JOHNNA WORMAN, DESERT NEWS

# Disease has Utah whirling

## Fish-killing parasite discovered in state about 10 years ago

By Ray Grass  
Deseret News outdoor editor

Ten years ago, Utah was, in fishing terms, disease free. Few states, at the time, were. A few months later it wasn't... and hasn't been since.

A pesky little parasite, smaller than the point of a pin, mysteriously appeared in a private hatchery in Loa. Among fish biologists this was alarming. Outside the field of genetic branding, there was little more than casual concern. No one really knew what to expect.

TUESDAY'S OUTDOORS

What, after all, could a tiny bug with a noxious name like *Myxobolus cerebralis* do to a five-pound rainbow... or any fish?

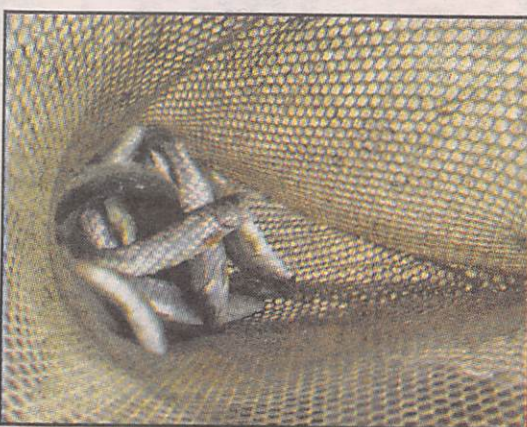
Now, a few months shy of the 10th anniversary of the discovery of whirling disease in Utah, the bug continues to spread throughout the state. It already has cost Utah sportsmen millions of dollars and will cost millions more, and considered an even greater loss than the money to many fishermen is the immeasurable amount of lost fishing opportunity.

Worse still, there are no signs of it withdrawing. Quite the opposite.

It is now a disease with a grasp on Utah waters so tight that the 400,000-

Please see WHIRLING on D5

Fish in the Midway Fish Hatchery were infected with whirling disease.



JOHNNA WORMAN, DESERT NEWS

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EMAIL: grass@desnews.com





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fall, Belk and stu- out a fish census by

to determine habitat requirements for native species so they can persist in the midst of large populations of brown trout.

But who cares about fish diversity? Responds Nannini, it'd be boring to live in a world that "only had people and cows and stuff." If trout can't eat fish prey, they feed on invertebrates and become "all skinny and not very fun to catch."

So Belk is pondering what to do to protect the native species.

"Why would one be more vulnerable to a brown trout than the other?" he wonders. "Maybe there are some special things that we need to do relative to leatherside chubs."

That special something may be the restoration of much of the Provo River, as advised by Belk. Following many of the suggestions of Belk and other environmental experts, a pilot project to do that is nearing completion. The project is

located where the river intersects U.S. 40 near Heber.

Where the river was channelized, the current is swift between the straight berms erected by engineers.

"The river doesn't have an opportunity to meander around and create sort of backwaters or cut-off pools or slow water habitat," he said.

When brown trout prowl a pipeline of a river, the exposed native fish can be gobbled up easily. "There's no place to hide, essentially," Belk said. They may become extinct, unless something is done to restore the habitat.

The small fish seem to be able to survive in a stretch of the river that was not dredged and straightened, thanks to the opposition of a landowner. In such stretches, the shin-

ers and chub can hunker in shallow, protected, slow-water pools that trout don't like.

In the renovation, project managers have created a side channel 10 or 12 feet wide, where the waters of the Provo can move slowly through the scar of an old channel that was once present. "We're looking at how the fish community develops in that section," Belk said.

A varied habitat should help all species, from fish to plants to birds.

He has a hunch that the prey will multiply, which should be good for the small fish as well as for the trout that will inevitably eat many of the chub and shiners.

"Some people, when they hear about changes in the river, get worried that that's going to affect the brown trout populations or that we're favoring what they would call

trash fish over sport fishes. And the point of this is, that this is going to be good for everything in there. It'll be better fishing," Belk said.

"There will be more brown trout."

He cites data collected by the Utah Division of Wildlife Resources showing that a diverse habitat has more trout as well as more of the native species.

Specialists in other fields found that what was good for trout also was good for birds, mammals, vegetation, the hydrology of the river.

"This is something that will be good not only for those few of us who like leatherside chubs, but also for all those people who like to fish for brown trout or rainbows. And it'll be good for anybody who wants to take a walk with their family out there and watch birds."

ME

## big ape returns color and pizzazz

chiffmann

writer

key Kong, you big ape. k. time for your holiday key Kong 64 is the nentially muddled

trollable characters, all of the ape variety. They include DK, who we've already met; Diddy Kong, a little guy with a guitar and a pistol; Chunky Kong, who shows up in the third level with a pineapple shooter; Lanky Kong, whose gun fires



## INTERNET

Continued from C1

quantities of information, either. But they handle graphics pretty well. And the low-end prices aren't bad, at around \$150-\$200.

You can send and receive e-mail, browse the Internet and, if you've got a printer connected, even print out the material you're viewing. To store material, though, you're going to need to hook up to a computer.

Still thinking about going online but having a hard time deciding how to do it? The truth is, you will





Michael Nannini and Mark Belk test the response of a chub to a brown attack.

## FISH

*Continued from C1*

mental protection was not as well understood, much of the Provo was "channelized" to deliver water more efficiently.

The leatherside chub and redside shiners are native fish and prey to the brown trout, which was introduced from Europe long ago. The two prey species look much alike but have some differences in how they react to trout, Belk said.

"The leatherside chub seems to be more likely to decline and go extinct when brown trout are in the system, if there's not appropriate habitat there," he said.

"The redside shiner... will react to the predator quicker than the leatherside chub," Nannini added. The difference could spell extinction for the chub, in the face of voracious trout populations, unless something is done to protect them.

That's not to say that this is a grim project, dealing with the life or death of a species. Actually, it's enjoyable, with a lot of time spent outdoors studying the fish and even making like a fish.

During the fall, Belk and students carried out a fish census by

donning dry suits, face masks, flippers and snorkels, to float in the Provo.

"At times you'll be snorkeling along, and you'll see a big log or something, and look down and here's two brown trout that'll be this big," he said, holding his hands about 18 inches apart.

The overall idea of the project is to determine habitat requirements for native species so they can persist in the midst of large populations of brown trout.

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Professor Mark Belk points to a channel engineers have added to the Provo River that creates a haven for small fish.

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